

 Lvwo	Specification	Versions	A0
		Date	Nov. 21, 2023
		DOC No:	LW-AHSJ-CN20231121030
Address: Economic Development Zone of Hangbu town, Shucheng County, Lu'an, China			
Tel:+86-0564-8030526	Post Code:231300	Web: www.lvwo-energy.com	

NO. : LW-AHSJ-CN20231121030

12.8V20Ah

Product Specification

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I. Battery system design reference technical document

GB/T 191 Packaging, storage and transportation symbols

GB/T 2408-2008 Determination of combustion properties of plastics Horizontal and vertical methods

GB/T 2829-2002 Cyclic test count sampling procedures and tables (for test checks on process stability)

GB/T 17626.2-2018 Electromagnetic compatibility Test and measurement techniques Electrostatic discharge immunity test

GB/T 17626.5-2019 Electromagnetic compatibility Test and measurement techniques Surge (shock) immunity test

GB/T 20626.1-2006 Special Environmental Conditions Plateau Electrical and Electronic Products Part 1: General Technical Requirements

GB 50689-2011 Design specification for lightning protection and grounding engineering for communication stations

YD/T 983 Limit values and measurement methods for electromagnetic compatibility of communication power supply equipment

YD/T 1051-2018 General Technical Requirements for Communication Bureau (Station) Power Supply System

YD/T 1363.3-2014 Centralized Monitoring and Management System for Power Supply, Air Conditioning and Environment of Communication Bureau (Station) Part 3: Front-end Intelligent Device Protocols

YD/T 5040-2010 Design specification for the installation of communication power supply equipment engineering

II. Supply list

No.	Model	Unit	Quantity	Notes
1	12.8V20Ah	pcs	1	
2				

III. Battery system usage requirements

1. Battery system operating external ambient temperature requirements: charging and discharging: charging and discharging $-20^{\circ}\text{C} \sim 60^{\circ}\text{C}$;

2. Battery system working external environment humidity requirements:
 $10\% \leq \text{humidity} \leq 90\% \text{RH}$;

3. Battery system operation state try to maintain more than 20% SOC;

4. When the battery system is not in use for a short period of time, it is required to maintain more than 60% SOC and be stored in a dry, clean and well-ventilated warehouse at $5^{\circ}\text{C} \sim 45^{\circ}\text{C}$.

5. During the loading process of the battery pack, it is required to carry and put it gently, and strictly prevent it from falling, rolling and impacting;

6. The battery pack shall not be placed upside down or lying down in the storage state; it is strictly prohibited to expose the battery pack to sunlight, rain or water for a long time;

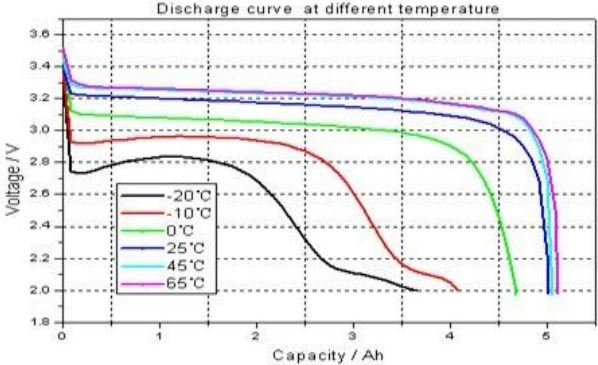
7. Ensure that the battery system in the operation or storage state away from flammable and explosive substances, high temperature environment;

8. It is strictly prohibited to force the battery system to operate under the state of short circuit, overcharge and high temperature alarm;

9. Strictly prohibit customers from disassembling the battery system without permission;

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IV. Energy storage system parameters

Cell parameters			
No.	Items	Parameters	Notes
1	Type	Lithium Iron Phosphate Battery	
2	Rated voltage/Capacity	3.2V/6Ah (IFR32700)	
3	Cell voltage range	2.5V-3.65V	
4	Cells weight	140g	
5	Dimension	diameter: 32.3mm, Height: 70.5mm	
6	Positive electrode	Olivine-type LiFePO4 materials	
7	Negative electrode	Synthetic graphite	
8	electrolyte composition	Lithium hexafluorophosphate	
9	Electrolyte morphology	Lean liquid	
10	working temp	charging 0°C-60°C; discharging -20°C-60°C	
11	charge retention capability	97% (25°C, 30days)	
12	Cycle times	More than 4000 times (0.2C cycle, normal temp, retention capacity: 80%)	
13	Discharge curve of monomer in -20°C, -10°C, 0°C, 25°C, 45°C, 65°C environment		

Battery system parameters			
No.	Item	Parameters	Notes
1	Rated capacity	20Ah	
2	Rated voltage	12.8V	4 series
3	Rated power	256Wh	
4	Series-parallel system	4S4P	
5	Pack quantity	1	
6	Cycle times	more than 4000 times (20~95%SOC, 20±5°C)	
7	Working temp	charging	-0°C~55°C
		discharging	-20°C~55°C
8	system working voltage	2.5V~3.65V	
9	Charge/discharge capacity efficiency	≥96%	

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10	Maximum continuous charging current (A)	15	
11	Maximum Continuous Discharge Current (A)	30	
12	Cooling method	Battery box natural cooling	
13	communication method	No	
14	Bluetooth	No	
15	Dimension	181*76*168mm	
16	Ingress protection	IP55	
17	Weight	a b o u t 3KG	

V. Pack Structure



Pack appearance schematic
(Dimensions subject to final design)

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VI. BMS parameters

Function	Items	Parameters	accuracy	unit
Charge protection	Overcharging protection voltage	3750	±25	(mV)
	Overcharging protection delay	1000	±500	(mS)
	Overcharging protection recovery voltage	3550	±50	(mV)
	Overcharge protection recovery conditions	Each battery voltage is lower than the overcharge recovery voltage		
	Charging overcurrent protection delay		±500	(mS)
	Charge overcurrent protection recovery conditions	Disconnect charger.		
equalization	Equalized turn-on voltage	3500	±30	(mV)
	Equalization current	40	±10	(mA)
	Equalization approach	Charging equalization		
Discharge protection	overdischarge protection voltage	2200	±80	(mV)
	overdischarge protection delay	1000	±500	(mS)
	Overdischarge protection recovery voltage	2700	±100	(mV)
	Recovery conditions for overdischarge protection	Disconnect load or plug in charger		
	Discharge overcurrent protection delay	200	±100	(mS)
	short-circuit protection	yes		(A)
	Short-circuit protection delay	100-800	/	(uS)
	Overcurrent/short-circuit protection delay recovery condition	Disconnect load or plug in charger		
temperature protection	Charging High Temperature Protection	55	±5	(°C)
	Charging High Temperature Protection Recovery	45	±5	(°C)
	Charging Low Temperature Protection	-7	/	(°C)
	Charging cryoprotection recovery	0	/	(°C)
	Discharge heat protection	75	±5	(°C)
	Discharge High Temperature Protection Recovery	55	±10	(°C)
self-consumption	Single section self-consumption	22.8	≤50	(uA)

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VII. label

